

## **ABSTRACT OF THE DISCLOSURE**

The present invention is a method for exploring the viewpoint and focal length of a fisheye lens camera (FELC). It employs the characteristic of the central symmetry of the distortion of the fisheye lens (FEL) to set its optic axis by means of a calibration target with  
5 a plurality of symmetrically homocentric figures. Once the optic axis is fixed, further disclose the viewpoint (VP) of the FELC along the optic axis through a trail-and-error procedure and calculate its effective focal length and classify it to the primitive projection mode. Because the invention is capable of finding out both the internal and external parameters of the FELC and the calibration method is easy, low-cost, suitable to any  
10 projection model, and has greater sensitivity corresponding to an increasing in image distortion, the distortive images can be transformed easily to normal ones which fit in with a central perspective mechanism. Furthermore, the invention is also practicable and excellent in its applications in the fields of quality identification of the FEL and wide-view 3-D metering.